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THE BELGIAN CONGO WITH MAP

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THE BELGIAN CONGO

A NEW FIELD FOR AMERICAN ENTERPRISE

Stanley's Darkest Africa of Cannibalism and Conflict Now a Peaceful Region for Agriculturist and Trader Traversed by Rail, Steam and Motor Car

By EDWARD V. LEPLAE

No colony in Africa has a greater economic future than the Belgian Congo, because none combines, as the Congo does, thousands of miles of deep and easily navigable rivers, with an excellent climate, unlimited agricultural possibilities, enormous hardwood forests, and a considerable wealth of the most valuable ores, metals and precious stones.

These assets are specially valuable on account of the fact that the situation of the Belgian Congo is unique from a commercial and industrial point of view. This colony, with her unequalled waterways and great agricultural and mineral wealth, covers the very heart of the former "Dark Continent," and, consequently, must be the *crossroads* where all the principal trans-African highways, the steamer and railway lines either already meet or will meet in the future.

Since the Belgians took over the Congo in 1909, they have been working strenuously to push their colony forward with all speed.

Development Continued During the War

The Colonial Minister, Mr. J. J. Renkin, with unshakable faith in the final victory of the Allies, ordered that all the work initiated in the Congo should go on, notwithstanding the war. Even railway building was continued, in order to link the Congo River and Lake Tanganyka with the South African railways. The Congo officials, who all wanted to fight the Germans in Europe, were sent back to the Colony.

Great schemes are afoot now for new development, both moral and material. Belgium wants to leave no stone unturned that can afford help towards the welfare of the native population and the advance of agriculture, mining and trade.

Through the establishment of steamer and railway lines, and of a very complete legislative and administrative system, the heart of Africa has been transformed by the Belgians from a wild and dangerous country, inhabited by millions of cannibal and warlike natives, into a prosperous and quiet colony, where trading, farming and mining are

unhampered. This colony is now endowed with European laws and administration, telephone, telegraph and fourteen wireless stations, comfortable railways and steamers, well equipped towns and more than a thousand trading houses. Travelers can reside and trade in the Congo without any personal danger or hardships.

Natives are happy and well cared for and native rights are carefully protected against any encroachment.

Trade Open to All

The Belgian Congo is open to traders and planters of all nations of the world, in accordance with the international agreement from which the Colony derives its existence.

No preference whatever is given or can be given to any particular nation in respect of trading, buying, importing into or exporting goods from the Congo.

Thirty years ago, owing to lack of transport and medical help, to the cannibalism of most of the native tribes, to a long and bloody war against the Arab slave-traders, and also to the usual carelessness of the pioneers, the Congo acquired a bad reputation for unhealthiness and danger.

That was quite undeserved. Since the country has been equipped with rail, steamer and motor-car, comfortable buildings and hotels, thoroughly pacified and kept in quietness and order, the conditions of travel and residence have become excellent and compare favorably with those of any other equatorial country in Africa.

The climate is one of the mildest in the tropical world, as the whole colony is situated on a high tableland, sloping towards the west, and its lowest parts are more than a thousand feet above sea-level. This high altitude of the Belgian Congo produces a climate much cooler than the climate of tropical Asia and Malaya and much healthier than that of the west coast of Africa.

The highest parts, such as Katanga, at an altitude of about 4,500 feet, have a very temperate climate, with six months of dry season, at which time cold weather, and even frost, is experienced in the valleys.

Very high mountains rise on the eastern border of the Belgian Congo, between Lake Tanganyka and Lake Albert. Mt. Ruwenzori and the grand volcanoes near Lake Kivu are from 15,000 to 19,000 feet high, and capped with snow and glaciers.

The Natives and Their Character

The natives are gentle and intelligent, and generally good farmers. Their cannibalism was a result of the natural craving for meat and is now gone entirely.

When Stanley traveled through the Congo he found large numbers of native villages on the banks of the rivers. The population of the colony was therefore estimated at

about 30,000,000, a figure that is at least double that of the real population. In fact, the interior is very sparsely populated. It is even doubtful if the Congo contains as many as the 10,000,000 to 15,000,000 people commonly estimated by modern writers.

It has been impossible as yet to make a complete census of the native population, many negroes living in small villages scattered through the dense equatorial forests. An attempt at a census was made in 1915 and 1916 in the most accessible villages of each district, and this gave a total number of 5,146,150 natives, of whom 1,709,006 were men, 1,838,150 women, and 1,598,994 children.

Most of the Congo natives belong to the Bantu tribes. Some are dwarfs or pygmies (height about 4 ft.); some are giants (height about 7 ft.). The color of the skin varies from a light brown to a dark grey or black. The natives are generally well built, strong and healthy, good farmers, expert fishermen and hunters. Their usual food is composed of manioc (cassava), bananas, sorghum, corn, sweet potatoes, peanuts and beans; fish and game. These natives are now peaceful and law-abiding.

Influence of the Arab Slave-Traders

Arab slave-traders from Zanzibar and the East Coast invaded Central Africa and the Congo about 1850-1860. They were in quest of ivory, a very valuable product fetching high prices in India and Europe. The Arabs started with buying or exchanging ivory against manufactured goods, but ascertaining that the native populations were helpless, they very soon adopted a more profitable system. Followed by small armies of native retainers armed with guns, they attacked the villages during the night, murdered the aged people and the men who tried to resist, carried off the women and children, took the able-bodied men as slaves, made them carry the ivory to the East Coast, and sold them to land owners in Africa and Asia. On this trip of hundreds of miles a large percentage of the slaves died from hunger, thirst or bad treatment. Hundreds of thousands of Congo natives were enslaved or killed by the Arabs between 1860 and 1891, when the Belgians made war against the slave-traders and, after nine years of intermittent but fierce fighting, finally destroyed the power of the great Arab chiefs. The Belgians had to fight also against the Dervishes of the Egyptian Soudan, who used to buy slaves and ivory in the north-eastern districts of the Congo.

The Arabs introduced several species of food plants, rice, cotton, mangoes, date-palms and other tropical fruit. Arab-like populations, following the Moslem creed, are still found in large numbers on the middle Congo River, from Isangi and Stanleyville to Nyangwe and Kassongo. These two towns were very important during the Arab

rule, and are said to have numbered 30,000 inhabitants. The principal Arab towns of to-day are Kisanagani (Stanleyville), 8,000, and Kirundu, 4,000 inhabitants.

A very large number of Belgian and other missionaries are at work in the Congo; missionaries of any denomination enjoy perfect freedom of action, and special protection by the Government. There are several important American missions. The Bantu negroes were all pagans and fetichists. Many are now Christians, mostly Catholics, and a few in Central Congo are Moslems. The Catholic and Protestant missionaries have hundreds of elementary schools, teaching religion, writing and reading, also carpentry, printing, etc.

Administration and Law Courts

The Colonial Minister in Brussels is a member of the Belgian Government and is the head of the Colonial Administration. He has the advice of a Colonial Council. The laws for the Colony are voted by the Belgian Parliament; the executive power is vested in the King. The administrative and executive head in the Colony is the Governor General. The Colony is divided into four Provinces and 22 Districts. At the head of each province is a Vice-Governor. The head of a district is the District Commissioner; he is assisted by Territorial Administrators and Agents. Each district is subdivided into a certain number of territories.

The head of the Judicial Body is the Colonial Minister in Brussels, represented in the Colony by the Attorney Generals in Boma and Elisabethville.

Law-courts are found in the principal towns. Special Judges travel continually through the country. Minor offenses by natives are punished by the Territorial Administrator. There are Courts of Appeal in Boma and Elisabethville.

A

TRADE AND NATURAL PRODUCTS

The outbreak in 1914 of the European war produced only a short crisis in the Congo trade. Sea and river transport was resumed rapidly. Large quantities of food-stuffs and other supplies were needed for the campaign in German East Africa, and enabled the trading concerns to make some important transactions. Prices of colonial produce in the English and French market have been unusually high. However, the shortage of ocean steamers was severely felt in 1917 and 1918.

The notes issued by the State-guaranteed *Banque du Congo Belge* were made legal tender, and smaller notes of one and five francs (twenty cents and one dollar) were issued, in order to avoid a shortage of small currency. Export of gold and silver coin was prohibited. The rate

of the English pound paid in London has been maintained at Fr. 25.50 paid in the Congo.

Owing to these favorable conditions, imports and exports increased rapidly, as shown by the following figures, giving the *special trade* of the Congo colony:¹

Imports and Exports in the Congo
(Special Trade.)

A.—Under the Congo Free State Government.

	Imports	Exports.
1895	\$ 2,137,169	\$ 2,188,601
1900	4,944,825	9,475,580
1905	4,015,072	10,606,452

B.—Under the Belgian Government.

	Imports	Exports.
1910	\$ 7,369,301	\$13,320,459
1912	10,846,575	11,985,239
1913	14,318,156	11,037,475
1914	8,898,423	10,574,951
1915	4,690,648	14,398,962
1916	13,512,200	25,840,600

The goods imported into the Congo can be classified under three heads:

1. Native Trade; 2. Equipment; 3. Common Trade.

The following figures give an insight into the nature of the goods commonly imported into the Congo. Details of these and other imports are published by the Belgian Government in annual and periodical official papers:

Some of the Goods Imported Into the Congo in 1914

<i>I.—Native Trade:</i>	<i>Approximate Value in Dollars.</i>
Cotton Textures	\$821,000
Hardware	303,800
Flintlock Guns	5,500
Common Black Powder	29,500
<i>II.—Machinery and Equipment:</i>	
Steamers, Engines, etc.	231,100
Railway Equipment	612,400
Building Material	710,900
Machinery	566,000
Coal, Coke, etc.	230,700
Oil, Gasoline, etc.	287,000
<i>III.—Common Trade:</i>	
Meat, Fat, Butter, Fish.....	737,600
Cereals, Foods, Beverages	1,343,200
Clothing, Shoes	373,000
Tobacco, Cigars	108,900
Live Stock	377,200

¹ In the Belgian statistics, "General Trade" includes also the goods that are imported in transit, whereas "Special Trade" is limited to goods produced in or imported for use in the colony itself.

The total value of imports in 1914 was \$8,898,423, originating from the following countries:

Belgium	\$4,461,205
South Africa	1,253,600
England	1,068,893
Germany	600,396
United States	590,974
Portuguese Angola	253,830
France	177,340
Other countries	492,095

Imports have been considerably increased since 1914 by the importation of coke for the copper smelters in Katanga. This coke was imported from Rhodesia and South Africa, in quantities of 18,362 tons in 1913, 55,070 tons in 1915, and 91,178 tons in 1916. Deducting these quantities, we obtain for imports of general trade goods:

	Imports.	Value.
1913	152,440 tons	.....
1914	96,591 tons	.....
1915	30,796 tons	\$4,490,600
1916	48,499 tons	8,871,200

Since the outbreak of the European war most of the import and export goods were handled through the United Kingdom, as thirty-seven of the Belgian firms trading in the Congo have temporarily placed their offices in London.

Products Exported

The products exported from the Belgian Congo are mostly of vegetable origin; however, Katanga copper is being exported in steadily growing quantities.

The most important exports were as follows:

Year.	Palm Kernels.	Palm Oil.
1911	6,764 tons	2,273 tons
1912	5,895 tons	1,989 tons
1913	7,205 tons	1,974 tons
1914	8,052 tons	2,498 tons
1915	11,024 tons	3,408 tons
1916	22,391 tons	3,852 tons
1917	54,988 tons	5,393 tons

	Copal.	Rubber.	Cocoa.
1911 .....	....	3,402	681
1912	3,755	3,510	845
1913	4,697	3,624	914
1914	6,993	2,249	482
1915	4,265	2,179	620
1916	8,676	3,017	770
1917	7,402	....	783

	Copper.	Gold.	Diamonds.	Ivory.
1911	1,015 tons	1	..... carats	... tons
1912	2,463 tons	1	..... carats	233 tons
1913	5,412 tons	1½	15,000 carats	276 tons
1914	10,343 tons	1	39,000 carats	295 tons
1915	14,274 tons	4	54,000 carats	214 tons
1916	21,882 tons	3	80,000 carats	351 tons
1917	27,600 tons	3½	182,000 carats	180 tons

Concerning the export of palm oil, it is to be noted that an acre of palm grove should produce, even by the native methods of gathering kernels and oil, about the same quantity of each of these products, so that an export of 50,000 tons of palm kernels should give a corresponding export of about 50,000 tons of palm oil. But most of the palm oil is thrown away and lost through lack of suitable casks. The Congo being covered with very fine timber, there would be an opening there for several large cooperative plants.

It was estimated in 1916 that fully 100,000 tons of *palm kernels* could have been exported if transportation facilities had been more adequate. The number of oil palms and palm groves in the Congo is enormous, but the export of the oil and kernel was started only a few years ago, and but a very small proportion of the available product comes in the market.

Outside of producing palm-oil and palm kernels, the Belgian Congo is eminently suited by rainfall, temperature, and soil, for the production of many species of oil seeds. The natives grow sesamum, peanuts, castor beans, melons, cotton, etc., and many forest trees produce oil or fat-bearing seeds. The natives are quite willing to gather large quantities of natural products when they are assured of getting a decent price for the harvested goods.

The Belgian Congo was in 1910 one of the most important producers of native rubber, collected from the vines or creepers in the equatorial forests. Rubber sold at that time at 10 or 12 shillings a pound, and the rubber trade was a very profitable one. The situation is quite different now; most of the large vines have been cut down, and the price of rubber is only about 2 shillings per pound.

Rubber planting has a good future in the Congo. Para (or Hévea) is the most advisable species. Ceara (*Manihot*) does well in dry parts of the country.

Copal rosin, of superior quality, is found in large quantities in the extensive swampy forests of Central Congo.

Cocoa is very promising, and one of the best paying crops. The Congo cocoa is of good quality and sells at the same price as Sao Thome cocoa.

Coffee grows wild in the Congo forests, and several native Congo coffee species have been planted in Asia, among them the now widely known Robusta coffee. Ara-

bian and Mocha coffee of high quality is grown on some Congo plantations.

Tobacco is raised all over the colony by the natives, but none of it has been exported so far. Large quantities could be obtained.

Cotton is a new crop and has not yet come into the trade. The first consignments of native grown cotton have been sold in England, and fetched good prices, being classed as Middling and Good Middling. The crops of cotton grown in the Congo all belong to the American Upland cotton. Two steam ginneries were bought in the United States this year.

Rice is grown in ever-increasing quantities, and exported to surrounding countries. The Congo rice receives no irrigation, and is very nutritious and palatable. Two modern rice mills have been erected by Government to improve the character of the exports.

Trading Concerns Numerous

The number of trading houses, stores and branch offices opened by European and American traders in the Belgian Congo, is rapidly increasing. The total number of these establishments was 1,252 in 1915, and rose to 1,337 in 1916, an increase of 7 per cent., located as follows:

1. Western or Congo-Kassai Province ..	464
2. Equatorial Province	239
3. Oriental Province	310
4. Katanga Province	324
<hr/>	
Total.....	1,337

Trading in the Belgian Congo can be done by private persons or by corporations created in the colony, in Belgium, or in a foreign country.

Corporations created in a foreign country are allowed to establish branch offices in the Belgian Congo provided that within six months from the establishment of the branch office the following data are filed in the Law Courts of the District or Province:

1. Nature of business, objects or purposes to be transacted, promoted or carried on.
2. Names, places of residence, and liability of stockholders.
3. Name of corporation.
4. Names and residences of directors, officers and persons by whom the corporation's affairs are to be conducted, and who shall sign or seal in name of the corporation.
5. Duration of corporate existence.
6. Amount of capital stock; amount subscribed and paid in by each party.

7. Precise indication of stockholders who have to furnish money or property to the corporation, and of their duties and liabilities.
8. Location of office or place of business where actions can be legally notified.

Foreign corporations have to file an authenticated copy of their articles or charter of incorporation; the names and residences of their representatives in the Belgian Congo. Foreign corporations shall maintain one or more places of business within the colony, where legal process against the corporation may be served.

Principal Corporations Operating in the Belgian Congo

	Capital Stock (Shares and Debentures)	
	Dollars	
Railways		
Chemin de fer du Congo.....	19,400,000	
Chemin de fer du Katanga	16,000,000	
Chemin de fer des Grands Lacs	15,000,000	
Chemin de fer du Mayumbe	900,000	
Chemin de fer Bas Congo Katanga.....	400,000	
Ocean and River Steamer Lines		
Cie. Maritime Belge du Congo	2,837,432	
Société Anonyme Citas (river)	600,000	
Agricultural		
Soc. Agricole du Mayumbe	700,000	
Cie. Subscrière Européenne et Coloniale.	700,000	
La Luinha	680,000	
Société de Cultures au Congo	600,000	
La Luki	400,000	
Société de Colonisation agricole Mayumbe	300,000	
Lukula	300,000	
Plantations Hallet	280,000	
Sukdi Lubao	260,000	
Soc. An. Produits Végétaux du Haut Kasai	250,000	
Urselia (Cacao)	200,000	
Kiniati	152,000	
Société d'Agriculture et plantation.....	120,000	
Mining		
Union Minière du Haut Katanga	6,500,000	
Internationale Forestière et Minière	1,600,000	
Belge Industrielle et Minière du Katanga.	1,200,000	
Société Minière de Tele	900,000	
Cie. Géologique Minière	700,000	
Société Anversoise pour la recherche de Mines au Katanga	600,000	
Société de recherches minières Lufira....	600,000	
Société de recherches minières du Bas Katanga	400,000	
Société Minière Congolaise	200,000	

Banks

Banque du Congo Belge (State guar.)	1,000,000
Banque Commerciale du Congo	200,000

Trading Corporations

Huilleries du Congo Belge	6,000,000
Cie. du Kasai	1,800,000
Crédit Colonial et Commercial	1,000,000
Société Coloniale Anversoise	1,500,000
Société des Pétroles au Congo	1,200,000
Société Commerciale et Financière Africaine	1,200,000
Soc. An. Belge pour le Commerce du Haut Congo	1,010,000
Belge Katanga	1,000,000
Société Commerciale et Minière	600,000
Société Forestière et commerciale du Congo	600,000
Cie. du Lomarni	600,000
Société Belgica	600,000
Nieuwe Afrik. Handelsmaatschappy (Dutch)	600,000
Cie. du Congo pour le Commerce et l'Industrie	418,450
Intertropical Anglo-Belgian Trading	400,000
La Mercantile Anversoise	400,000
Cie. des Produits du Congo	240,000
Société Coloniale de Construction	250,000
Société Franco-Belge d'Elevage	200,000
Cie. Commerciale et Agricole d'Alimentation du Bas Congo	200,000
Comptoir Congolais Velde	200,000
Société Equatoriale Congolaise	200,000
Société Immobilière du Katanga	200,000
Congo Oriental Co.	200,000
Société Isanghi	140,000
Société Anonyme Belge de l'Uele	120,000
Société d'Etude des Pêcheries	130,000
Société l'Ikelemba	100,000
Cie. Bruxellise pour le commerce	100,000
Comptoir du Katanga	100,000
Syndicat d'Etudes et d'Enterprises	100,000

Shares with Undesignated Value:

Cie. du Congo Belge	34,000 shares
Comptoir Commercial Congolais	23,288 "

Plantations Lacourt.

N. B.—The relative importance of the companies cannot be deduced from their amount of capital stock. The list is incomplete, full information about the Congo companies being unavailable on account of the war.

Corporations with limited liability have to pay an annual tax on the profits made in the Colony. Corporations created in the Congo pay 2 per cent of these profits. Foreign corporations pay 1 per cent.

Trade Languages in the Congo

French and Flemish, being the national languages of Belgium, are exclusively used in all official matters, proclamations, decrees, legal procedure, etc. French is largely dominant. Some English is spoken in the extreme south of Katanga, owing to the presence of about 200 English and American engineers and foremen among the staff of the copper mines. Englishmen and Americans are met in all important centers, and many of the Belgians speak English also.

In trading with natives the local native language has to be used. There are hundreds of different native languages in the Congo, widely different from one another. This babel of tongues brought about the introduction of so-called commercial or trading languages.

The most important of these is the *Swahili* or *Kiswahili*, a language introduced by the Arab slave traders, and now spoken in the whole Eastern half of equatorial Africa. It is a mixture of Arabic and Bantu words, with a complicated grammar.

Swahili is spoken in the Eastern districts, from Lake Albert to Stanleyville, thence south to Bukama, and the copper mines of Katanga, and all around Tanganyka Lake. Many of the natives in the villages have learned Swahili during their trips to the mines or towards the River, so that it is generally possible, even in remote villages, to find one or two men who understand and speak Swahili.

In the central part of the Congo, Lingala (or Bangala) is the trading language on the Congo River and its surroundings, and Kiluba is spoken all over the Kassai and a large part of Central Katanga.¹

In the Western Congo (Boma, Matadi, Leopoldville) Swahili is not understood; Bangala is known by many natives. The common language is *Fio* or *Kikongo*.

White traders easily pick up the few words that are necessary to trade with natives. Simplified grammars and dictionaries have been published by the Government or by Missionaries for every important native language, and can be obtained easily for a few cents.

Articles and Methods of Trade

The principal objects of trade in Equatorial Africa are the natural products of the forests. They include rubber, copal, oilseeds, and hundreds of vegetable products, fibers, gums, tanning barks, etc. The natives used to exchange or barter these products, and also ivory, against European hardware, cotton, drills, beads, clothes, etc.

In order better to safeguard the interests of the natives, buying and selling by barter has now been pro-

¹ The prefixes *Ki* and *Li* indicate the meaning of language. The prefix *Ba* means people. So Bangala means the *Ngala* tribe; Lingala the Ngala language. Baluba means the Luba people; Kiluba means the Luba language. Kiswahili, the language of the Swahili.

hibited by the Belgian Government, and payments have to be made in money.

The natives are free to collect produce in the State forests. Any person residing in the Congo can obtain a permit enabling him to collect or buy from the natives these vegetable products. The permit is annual, costs \$5, and is delivered by the District Commissioner.

Ivory is subjected to special rules and taxes. Natives may kill elephants under a license delivered (free) by the District Commissioner. White men have to pay \$200 to \$300 yearly for a license to shoot adult male elephants (two). No female nor young elephants may be killed. Ivory trading and export are subjected to high taxes, and tusks weighing less than 5 pounds cannot be exported.

Spirits, or liquids containing more than 8 per cent. alcohol, cannot be sold or given or entrusted to natives. It has not been useful or possible hitherto to restrict the use and sale of liquids containing less than 8 per cent. alcohol, as the natives all over Africa are used to making wine or beer with native produce (corn, sorghum, pineapple, palm-juice, wheat, etc.).

White men cannot import spirits or trade in liquors without paying high taxes, obtaining special permits, and submitting to stringent rules. Selling spirits per glass is prohibited; no white man can buy less than half a pint in a sealed bottle, nor more than three quarts per month; every sale has to be entered in a special book. The trade in alcoholic liquors is controlled by rather complicated rules which should be carefully studied, as heavy penalties are incurred for disregarding the law.

Firearms and ammunition are subject to very stringent regulations. Only flintlock, smooth-bore guns and common black powder can be sold freely to natives. A special license has to be procured; fee, \$10.

Modern guns, including all cartridge-firing weapons and percussion-cap guns and pistols, may not be sold to natives. They have to be registered and stamped by the Custom House officials. The number of rifled bore guns allowed to each person is strictly limited. Traders should carefully peruse the special regulations for firearms.

Rubber may be bought in any quantity and exported, if exempt of adulteration, and if it contains less than 15 per cent. of foreign matter. Adulterated or impure rubber may not be exported from the Belgian Congo.

Palm-kernels and palm-oil may be bought in any quantity and exported, but nobody is allowed to pay to the natives more than a maximum price. This law was passed because some irresponsible traders disturbed the market by paying exorbitant prices during a few days, in order to snatch away the trade from their competitors. The subsequent fall in prices made the natives distrustful and was highly detrimental to the development of normal trade.

The maximum price established by the Government is still considerably above the normal value of the products in Central Africa.

Timber may not be cut without special licenses. This does not apply to firewood for private use.

Special regulations have been made for the manufacture and trade of foodstuffs (flour, bread, coffee, beer, jam, mineral water, rice, saccharine, etc.).

Public and Native Markets

Public markets are markets established in Government stations and towns, and where natives sell their produce. The days and hours of these markets are appointed by the District Commissioner. Nobody is allowed to buy, sell or exchange native products on the public thoroughfare within a circle of three to six miles radius of the market place; this rule was established in order that the interests of the natives may be cared for.

Special regulations are to be put in force for the cotton markets.

Native markets are those that are held in the native villages, on days and hours determined by the District Commissioner.

Trade Caravans

The Belgian Government is anxious to prevent every abuse bearing on the native population. Trade caravans cannot be organized without a written permit from the District Commissioner and the forwarding to this official of a document giving the names and residences of all the carriers, women and children in the caravan, and detailing the salaries and conditions of the enlistment. In every Government Station where the caravan passes through this written document and the whole caravan have to be brought before the Government official, who sees that the stipulated conditions are properly carried out and the salaries paid; he receives any complaint that the carriers wish to make.

The trader is responsible for any damage done by members of his caravan. Before starting he has to deposit \$8 per carrier; this money is refunded six months after the caravan has come back to its starting point.

Currency, Weights and Measures

The monetary unit is the Belgian (or French) *franc* (\$0.20). Bank notes issued by the *Banque du Congo Belge* (guaranteed by Government) are the only paper money that is legal tender. Copper and nickel coins are special to the Colony, whereas any gold and silver coins of the Latin Union are admitted, excepting some Italian and Greek coins. Silver coins, especially the half franc (\$0.10), the franc (\$0.20), and the 2-franc piece (\$0.40) are the most useful; also the 5-franc silver coin (\$1.00). Nickel is coming into use; copper is generally rejected;

paper money is not favored by the natives, as it is easily destroyed or lost.

The unit of weight is the French *kilogram* (2.2 lbs). The unit of measure is the French *liter* (1¾ pints).

The unit of length is the *meter* (39 1/3 in.), and for roads and distances the *kilometer* (0.62 miles), or the Belgian *league* (5 kilometers, or 3 miles).

Prohibition of Barter and Payments Made in Advance

In order better to protect the economic interests of the natives, the Belgian Government has made it unlawful to buy or sell goods by exchange or barter; this has been already put in force in several Districts and will soon be applied in every part of the Colony.

Traders used formerly to advance money or goods to natives, these advances to be repaid later with native produce or money. As this system allowed of rather frequent abuse, payment in advance is now strictly prohibited, excepting when the native is a regular licensed trader or a servant or employee.

Personal Taxes to Be Paid by Traders

Traders pay annual taxes to Government on four bases:

- I. Dwelling houses and stores, \$0.02 to \$0.20 per square meter.
- II. Unused plots in towns, \$0.01 per 10 square meters.
- III. White workmen and employees, \$4.00 to \$10.00 per head.
Native workmen and employees, \$0.20 to \$5.00 per head.
- IV. Steamers, motor boats, \$4.00 to \$8.00 per ton.
Towed barges and boats, \$2.00 to \$4.00 per ton.
Sail and rowboats, \$2.00 per boat.

Traders who have no fixed store in the Colony (peddlers) have to buy a license of \$40. The license costs \$100 for those trading also in rubber, copal and ivory.

Natives pay no taxes, except if they own a store or factory with at least one employee.

B

TRAVEL AND TRANSPORTATION

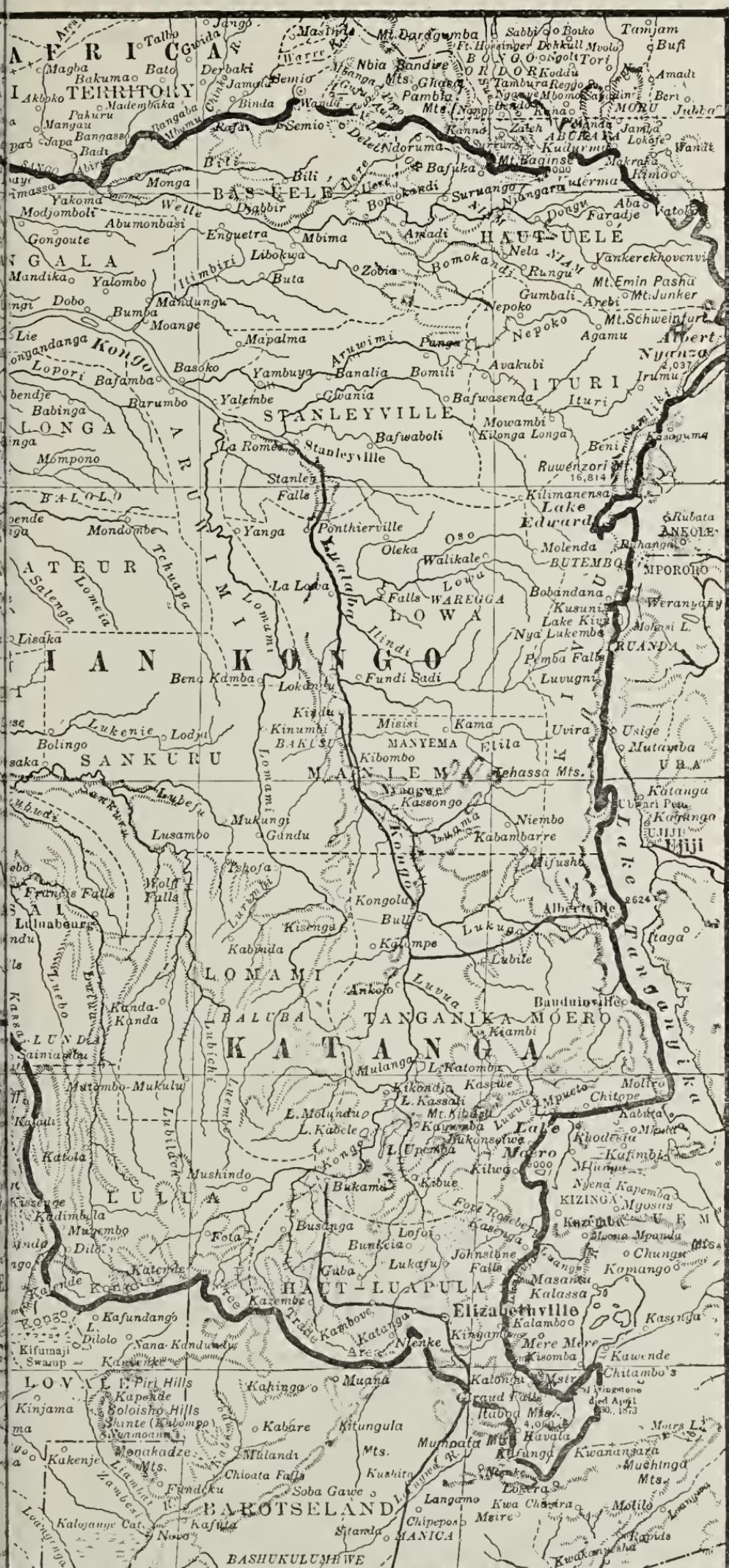
The Belgian Congo can be reached by a number of rail and steamer lines, affording every facility for travel and for the transportation of goods.

In fact, no other Central African Colony is to be compared with the Belgian Congo in this respect, or in respect of the work that has been done, and is contemplated, to improve the means of communication.

The routes leading to the Colony are the following:

- (a) From the West: The ocean steamers or sailing ships ascend the Congo River to Boma (54 miles), the





capital of the Colony, and Matadi, the trans-shipping port. Sailing ships are towed from Banana, the river mouth, to Matadi, a distance of 98 miles.

The Lower Congo Railway starts from Matadi, ascends the steep gradients of the Pallaballa and Crystal mountain ranges, and reaches Kinshasa, the principal commercial center of the Congo, where most of the trading firms are established, and from whence the Government and private steamers start towards the center of the Colony. The railway has a narrow gauge (2 ft. 6 in.), and the trains cover a distance of 250 miles in two days, stopping one night at Thysville.

Comfortable hotels are to be found in Boma, Matadi, Thysville and Kinshasa. Thysville is about halfway, and, owing to the elevation (3,000 ft.), has a temperate and bracing climate.

The river steamers run from Kinshasa to Stanleyville, a town situate about 1,000 miles up the broad Congo River. Other steamers run on the Kasai and Sankuru rivers to Lusambo (640 miles).

Stanleyville is connected by rail and steamer with the Katanga copper and tin district, with the East Coast of Africa (Dar es Salaam), and with South Africa and Cape-town.

A railway has been located from Stanleyville to Lake Albert and the Nile; this stretch is now partly covered by a motor-car service, partly by walking (trekking) and camping. This trip takes about five weeks.

From Lusambo, head of the Kasai and Sankuru river line, the traveler can reach the Great Lakes Railway (175 miles: two weeks' walking and camping), and proceed to Katanga and South Africa, or towards Tanganyka Lake and the East Coast.

(b) From the South: Several important lines of British and Portuguese steamers call at Capetown and also at Port Elizabeth, the principal importing center of South Africa. Express trains with dining and sleeping car service run north to Buluwayo, the Victoria Falls and the Belgian Congo.

Trains pass Elizabethville, the head town of Katanga (1,200 whites, 5,000 colored) and run through the Copper Mining District; they reach the Congo River and the new tin fields at Bukama (453 miles from the Congo border and 2,000 miles from Capetown).

From Bukama the traveler can follow the boat and rail line to Stanleyville and the Lower Congo, or travel to Lake Tanganyka, German East Africa, Dar es Salaam, and Zanzibar, connecting there with the East Coast, India and Suez Canal steamer lines. Or he can travel overland to Lusambo (15 days' walking and camping), where he strikes the steamer line (640 miles), running towards Kinshasa, Matadi and the West Coast.

(c) From the East: Steamers call at Durban and Beira, from where well equipped express trains run to the Congo, via Johannesburg and the Transvaal gold fields, or via Salisbury (Rhodesia). They pass through Buluwayo, Victoria Falls, Elizabethville (Katanga) and reach Bukama on the Congo River.

From Zanzibar and Dar es Salaam, another railroad runs through German East Africa to Kigoma, on Lake Tanganyika (700 miles), from whence a Belgian steamer and railway line connects with the Congo River steamers running from Kabalo north towards Stanleyville and south towards the Katanga.

A third route starts from Mombassa (British East Africa). The railway runs to Nairobi and the Victoria Nyanza. The Victoria Lake (or Nyanza) is crossed on 1,000-ton steamers, and gives connection at Jinja with a rail, steamer and motor-car road to Lake Albert, the Nile River and the Eastern Congo gold district.

An alternative motor road runs from Kampala to Toro and the Belgian border. A motor road connects Lake Albert with Kilo, the central town of the Gold district. From there four to five weeks of trekking and camping, along the location of the future railway, bring the traveler to Stanleyville on the Congo River, where he strikes the Katanga-South Africa and the Kinshasa-West Coast rail and steamer lines.

(d) From the North: The Egypt and Sudan route starts from Port Said or Alexandria for Cairo and Khartum, from which place river steamers run to Lado, head of the motor route towards the Belgian Congo border at Aba. From Aba, two or three weeks' walking (12 to 15 miles a day) brings you to Bambili (300 miles) and the motor-car road leading to Buta, and the Itimbiri and Congo rivers.

Projected Railways and Steamer Lines

Roads of access to the Congo have been surveyed by the Government and by private concerns, in order to open new districts.

From the North, a French trans-Saharan railroad is projected and would start from Algeria on the Mediterranean border.

From the West, a British railroad starts from Lobito Bay and Benguella, going towards the copper mines. It has reached about halfway to Katanga.

From the South, a short line is being located between Beira on the East Coast and Elizabethville to Katanga, in order to provide a short connection with the sea.

In the Belgian Congo itself a railroad line was located years ago from Stanleyville to Lake Albert and the Nile, this line being the last link to be built to complete the Cape to Cairo line, one of the great world highways, con-

necting South Africa overland with Cairo, Jerusalem, Constantinople, Paris and London (a total distance of 8,000 miles). This railway line to Lake Albert will run through the whole gold field of the North-Eastern Congo.

The Belgian Government, just before the war, had a line surveyed from Bukama (Katanga) to Kinshasa (800 miles).

In order to offer cheaper freight for agricultural and mineral produce, the Government is now studying a scheme of towboat and barge transportation on the river, following the methods used on the Mississippi River. American steamers and barges and American experts have been suggested to that effect.

Fast Passenger Traffic Towards Stanleyville

The town of Stanleyville, situated in the very center of Africa, had been selected by Germany as the future head town or capital city of her Central African Empire, and was to be called Wilhelmstadt.

A fast passenger shallow draft steamer, built in Pittsburgh, Pa., has been bought by the Belgian Government and sent to the Congo. She will materially reduce the time of the trans-Africa travel, as it is expected to cover the Stanleyville-Kinshasa run (1,000 miles) in five days, instead of the ten or twelve that are required now. Similar improvements are being projected on other sections of the Congo routes and will make the whole of this territory readily accessible to travelers and traders.

Remarkable River System

The Belgian Congo has its most valuable asset in its splendid network of rivers, the second greatest river system in the world. The Congo River proper has a total length of more than 2,300 miles, and discharges into the Atlantic Ocean at Banana, a volume of water that is second only to the discharge of the Amazon River in Brazil.

The Lower Congo River, near the sea, is, however, not navigable for a distance of about 300 miles, being interrupted by rapids and waterfalls in four or five places. Expert engineers are of opinion that locks and short canals could be built at a cost of \$20,000,000 to \$30,000,000 and enable the river steamers and barges to bring their cargoes down to Matadi and Boma for trans-shipment to the ocean steamers.

Above the falls, the river expands and forms the Stanley Pool. From that point the Congo River, for more than 900 miles, is navigable by steamers drawing 8 to 10 feet of water. In many places the width of this magnificent river is nearly 10 miles; it is seldom less than 3 to 4 miles. Even at 2,000 miles from its mouth the Congo is more than 1,000 feet broad and 6 to 8 feet deep. Near Bukama, the shallowest part of the river, there are still about 3 feet of water during the driest season of the year.

These depths are greater than those of most of the large European and American rivers that carry heavy traffic. In fact, without having had to spend any money to improve its waterways, the Belgian Congo has a river system that can be compared, as to depth of water, with the Rhine, the Danube, the Mississippi, the Ohio and other rivers that have had to be improved at great cost.

About 150 steamers are plying on the Congo rivers. Large 500-ton stern-wheelers, carrying freight, and 200-ton passenger boats are run by the Government and by some private companies on the principal reach of the river, between Kinshasa and Stanleyville. Smaller steamers run on the Stanleyville-Bukama line and on the Kinshasa-Lusambo line.

The Congo River has interesting and grand scenery, its course lying through the mighty *Equatorial Forest* and being dotted with about 4,000 palm-clad islands, some of them quite small, some of them very large, even 20 to 30 miles long. Near Bukama, the Congo River flows through an enormous sea of green papyri, exactly similar to those that are found in the Sudd District of the Nile. They cover a number of small lakes around Lake Kisale, and are alive with water fowl; hippopotamus and crocodiles are numerous everywhere; large and small antelope and even elephant are to be seen from the deck of the steamer.

The native population, numbering from ten to fifteen million people, live mostly on the banks of the river, and of its extensive tributaries, aggregating about 12,000 miles of water navigable by steamers. The size of the Congo waterways will be better understood by Americans if we say that the navigable rivers accessible to shallow-draft steamers have about the same total length as the whole combined Mississippi and Missouri river system.

C

AGRICULTURE AND FORESTRY

When the Belgians, forty years ago, started their first experiments in colonial work, nobody in Belgium had any knowledge of tropical agriculture. The Congo Free State tried large plantations of rubber vines, funtumia, coffee and cocoa, but nearly all of them were failures, owing to the lack of upkeep or unsuitability of the species for economic purposes. Much care was given in those times to botanical work and theory, but practical farming and planting were quite neglected.

As soon as the Congo was annexed by the Belgians (1908-1909) steps were taken to provide for efficient research in tropical agriculture by an Agricultural Department equipped on the most modern lines. Large grants of money were provided, averaging about \$400,000 a year for the last ten years.

The work was begun in 1910. Planting of funtumia, or Lagos rubber tree, was stopped, and replaced by hevea or Para rubber cultivation. The old State Plantations were inspected, and most of them altered or abandoned as valueless. The planting operations generally were reduced from year to year, and only the best plantations were given any extension.

The Agricultural Department in the Congo

In the meantime, measures were taken to educate a number of agricultural experts, who were sent to Java, Ceylon, India, Egypt, and to most of the British, French, Portuguese and German colonies in Africa. Large consignments of seeds and of every kind of economic plants of the Tropics were brought from overseas, and foreign experts were enlisted for cotton cultivation, steam-plowing and rice-milling. The officials of the Agricultural Department are mostly Belgians, but not a few are Italians or Swiss, and some are British or American.

The State Plantations are intended to prove and show to the settlers what export crops are remunerative in the Colony, how they should be grown, the produce prepared, the fungus and insect eliminated, plagues suppressed, etc. The first researches were devoted to investigations on meteorology, soils, varieties of plants and trees, breeds of cattle, methods of cultivation, diseases, etc. Also to the clearing and planting of large plantations of rubber, coffee, cocoa, etc., mixed farming, forestry, fruit, flower and ornamental gardening. Five fully equipped laboratories have been erected. Two are specializing in the study of soils. Two others work on plant diseases and injurious insects. One is devoted to bacteriological research on the diseases of cattle, horses, and all species of farm animals. A special station is devoted to the training of African elephants, and has 35 trained elephants.

In 1916, when sufficient experience had been acquired in these special pursuits, a start was made to develop native agriculture, and the head of the Agricultural Department went to Egypt, the Soudan, Uganda, British East Africa and Mozambique to gather information about the methods applied in those countries to the improvements of native husbandry.

Native Agriculture

The District Commissioner of each one of the 22 districts of Belgian Congo is assisted in agricultural matters by one, or in specially important regions, such as cotton-growing districts, by several agricultural officials. These begin their work by studying the agricultural methods of each one of the various and often numerous native tribes inhabiting the district. Monographs on these studies are published, usually with a number of photographs, in the *Bulletin Agricole du Congo Belge*, a quarterly magazine.

The numerous varieties of each plant cultivated by the tribes are noted and tested. Seeds and plants, cattle and improved implements are distributed free, and advice is given.

The District Agriculturist has to be a good linguist and to enjoy the confidence of the natives. He has to report to headquarters on the state of native and European agriculture in his district, to study the marketing and transportation of crops, and to suggest any improvement in legislation, administration, transport, roads, cultivation, etc., that he believes profitable to the natives or to the white settlers in his district. He will also be in charge of the agricultural schools for natives that are to be organized in several districts this year.

Introduction and extension of cotton and rice growing were started in 1917, and a law passed whereby the native can be compelled to make plantations or cultivate export crops for his own use, providing that the work on these crops does not exceed five days per month. The measure was taken because the natural laziness of the average African was thought to be hopeless. However, this law has not been called into operation hitherto as the natives, who are really intelligent and good agriculturists and traders, soon grasped how much benefit was to be derived for them from the new crops. The Government guarantees the sale of these crops at a price remunerative to the native.

As a result of this agricultural propaganda, the natives of the Congo have planted since 1916, in addition to their usual food crops, several million oil-palms, and produced 20,000 tons of rice, instead of formerly 5,000, also about 600 tons of very fair cotton.

The cotton crop of next year, 1919, is expected to yield about 1,500 to 2,000 tons. The cotton grown in the Congo is American upland, and the work is done by an American expert, with a staff of several officials of the Agricultural Department. Two steam cotton-gins have been bought in the United States and are to be sent to the Congo this year, along with a number of hand-gins.

The Agricultural Department is now collecting information in order to organize systematically a large agricultural production by the natives. This requires, first of all, a suitable and powerful equipment of mechanical transport by river, rail and roads. It is quite easy to get the natives to grow cotton, rice and other crops for export, but the delivery of these crops would exact a very heavy toll of labor from the native farmers, as each one of them would have to carry the whole crop, in 56-pound loads, to the nearest steamer landing, two or three days' walk from his village. This would mean continuous and tiring work during one to three months a year. Improvement of mechanical transport on land and water will solve this difficulty.

Careful attention is given by the District Commissioners and by the Governors of the Provinces to the use and ownership of land, in order to improve the conditions of native agriculture and to prevent any encroachment on native rights. These rights are, moreover, under the special care of the Judges throughout the Colony.

White Settlers and Planters---Land Concessions

The number of white settlers on farms and plantations is still very small. There are a few Portuguese, Italians, French and British planters, a small number of plantations belonging to companies and also some Belgian farms and private plantations.

Land can be had cheap and easily, up to 1,250 acres, by applying to the Governor General. Larger tracts have to be granted by the Colonial Minister in Brussels. The country is covered with heavy timber, and the clearing must be done very carefully, especially when Para rubber is to be planted.

The Belgian Government is anxious to promote colonial enterprise among the farmers in Belgium and continually studies schemes to help them to start farming and plantation work in the Colony. American planters or planting concerns would be welcome.

Experimental Settlement of Belgian Small Farmers in Katanga

A private Settlement Company received large grants from the Government in 1909 to equip a number of small farms for Belgian settlers in Katanga. The work was very difficult on account of the lack of transportation and of the presence of the *tsetse* fly, which killed the cattle and horses.

The country surrounding the copper mines is a poor and dreary forest belt. Native labor is scarce and practically no kind of farming was known before the settlement was started. The country was periodically devastated by hunger and disease, and very few natives cared to live there at all, except during a few months in the year, when they gathered some copper that was sold to the other native peoples of Central Africa.

The Agricultural Department took the work in hand in 1911, and received special grants for that purpose. A large amount of every kind of agricultural seed and plant, implements, portable buildings, furniture, sheds, steam plowing-engines and stump-pullers was acquired in South Africa. Hundreds of native laborers were put at work on the clearing and draining of the first small farms. Large nurseries for imported forest trees, flowers and shrubs were started near Elizabethville, where a fully equipped meteorological station was erected.

The first Belgian settlers were brought over at Government expense in 1911 and 1912. Some of them went home

after a few months or a year; the others learned to stand the real difficulties of farming in the copper district. Very interesting results have been obtained by six years of patient research work in the Government experimental farm, and the farmers are now gradually improving their situation.

The style of farming applied in this part of the Congo is very similar to that which is followed in Belgium, and is, in fact, intensive farming, large quantities of artificial manure being used every year. This kind of agriculture is special to the Katanga district.

In the other districts of the Congo, where the climate is really tropical, agriculture is done on the usual system of tropical countries. Plantations are mostly Para and Ceara rubber, cacao, coffee, rice, oil-palms and other tropical crops.

Government Experimental Plantations

The Government has about 10,000 acres of experimental plantations, mostly Para rubber and cacao, and some coffee. The aim of these State farms is to show what benefits can be derived from tropical plantations in Central Africa. The Agricultural Department officials use these plantations for many experiments on the methods of growing the crops and of fighting against the insects and plant diseases.

Coffee Plantations

A fine coffee plantation, with about 290 acres of coffee trees, representing about fifteen different species and varieties, is located near Stanleyville. Some of these species and varieties have to be grown under shade, while some others do not require any shade at all. The celebrated *Robusto Coffee*, now planted all over the tropical world, is indigenous in Central Congo, and the first seed of this coffee was collected near Stanleyville. Some coffee is grown also on several other Government farms and private properties.

Rubber Plantations

Several rubber plantations are run by the Agricultural Department and were principally planted with Para or Hevea rubber trees. The trees have made rapid growth. Seven-year-old trees are frequently more than 3 feet in circumference. Root diseases have given some trouble in young plantations, but on the whole the growth of the trees is perfect. Tapping experiments were started in 1918, and have given a good flow of latex and rubber of excellent quality. There are a number of privately owned Para rubber plantations in the Colony, some of them being of tapping age.

Cacao Plantations

Private companies have planted some thousands of acres of cacao in the Congo, and the Government maintains one or two experimental stations.

One of the largest is near Stanleyville, at Barumbu, where about 1,000 acres are planted of a total extent of more than 3,000 acres. Several species of cocoa are planted and grown under different methods. The great influence of shade is remarkable. Cocoa has now been planted quite successfully between Funtumia rubber trees. The Barumbu cocoa sells in London at the same price as the San Thome and Gold Coast produce.

Oil Palm Forests and Plantations

The principal produce of the Congo soil is the fruit of the African oil-palm. When boiled and pressed, these fruits yield a very valuable commercial product, known under the name of palm-oil, that is used for soap, margarine and glycerine. The seed contained in these fruits has a kernel about the size of a peanut, very rich in oil, and this is exported in very large quantities under the name of palm-kernels. The kernel-oil is largely used for the manufacture of margarine:

Several hundred thousand tons of these products—palm-oil and palm-kernels—were shipped from the West Coast of Africa every year, and went to Germany, where they were manufactured. This very important trade has now been taken over by Great Britain, and large kernel-crushing plants have been erected in England.

Only small quantities of palm-oil and palm-kernels have been sent to the United States this year, but larger shipments are expected. The Belgian Congo could produce several hundred thousand tons of these products, and also large quantities of many different oil seeds, such as castor-oil, peanuts, sesamum, etc.

An important English concern acquired from the Government in 1911 a concession of 750,000 acres of palm forests and erected up-to-date oil mills. A number of smaller concessions have been granted since the war. The latest development in this matter is the planting of oil-palms. Large plantations have been begun and many more are projected, as plantations can be worked much more economically than natural palm forests.

The Botanical Gardens at Eala

The Botanical Gardens at Eala are located on the south bank of the Ruki River, near Coquilhatville, the head town of the Equatorial Province. The gardens, covering about 700 acres, were started in 1895 exactly under the equator. The rainfall averages 80 inches, with less rain about January and August. Large numbers of economic and ornamental plants are raised and distributed free to the Gov-

ernment Stations and to the missionaries. Cocoa planting was introduced in 1916 to cover a part of the expenses. There are laboratories for the study of plant diseases and noxious insects, and rooms are provided for foreign scientists wishing to investigate the flora of Central Africa.

Lumber Supply Enormous

The Central Congo is one huge tropical forest, covering some 500,000 square miles. Another 200,000 square miles of dry forest cover the South and Katanga. The forest wealth of the Belgian Congo is consequently enormous. The high cost of transport has hitherto prevented any important lumbering enterprise.

Perfectly aware of this difficulty, which applies also to the export of low-priced agricultural produce, the Agricultural Department is now striving to obtain a complete transformation of the methods of transport on the Congo River and its tributaries. Transport of lumber in barges, as it is done on the Ohio and Mississippi rivers, could be done at very low rates.

Coupled with the improvement of the Lower Congo Railway and the equipment, on modern lines, of two transhipping ports, on the Stanley Pool and at Matadi, this reform will enable the trader to bring the Central African crops and lumber and also mining produce to the sea coast at very low rates of freight, that could not be obtained by rail transport.

D

GREAT MINERAL WEALTH

The Congo was formerly held to be an exclusively agricultural country, and to contain only a limited extent of mineral deposits.

More careful prospecting has shown that this idea is utterly false, and that the Belgian Congo is, on the contrary, a very rich mining country. In fact, the districts along the eastern border, from Lake Albert, in the north, to the extreme south of Katanga, are full of valuable mineral deposits.

Gold, diamonds, copper, tin and iron are found in many places, sometimes in enormous quantities. Coal has been discovered on Lake Tanganyika. Oil and oil-shale have been located in several districts.

The existence of large copper ore deposits in the very center of Africa has been known for centuries by the natives. The powerful native kings of Uganda, Lunda and other Central African countries used to send every year to the copper country large caravans of slaves, carrying native goods. These were bartered for copper ingots, manufactured in the mines of the wild and desert country that is known now as Katanga. Local craftsmen or *fundis*,

slaves to the King of Lunda and to his *Kazembes* or governors, extracted the ore and melted the copper in small furnaces, about 4 feet high, made of clay, thousands of which are still found in the copper districts. The workings were extensive, and some open-air quarries were about 100 feet deep; remains of a large underground gallery have been discovered.

The Zambesi-Congo watershed had been designated as frontier to the Congo State: four Belgian expeditions were sent in 1891 to take possession of the Katanga and prospect its mineral resources. They lost a great number of men, both whites and natives, through hunger, smallpox and attacks by the local tribesmen. The Arab war broke out, and in 1900 the State finally put a stop to inter-tribal wars, cannibalism and raids by Arab slave-drivers.

As soon as a civilized form of police and administration was established, a closer study of the copper deposits was done with the aid of English prospectors. There was no difficulty in locating the deposits, as they are bare hills, rising in the midst of a dense forest of hardwood trees and strewn with greenish copper stones. The location and name of each one of these hills were well known to the natives.

This prospecting has shown that the copper ore deposits of Katanga are not only of enormous extent and tonnage, but also that the ore is much richer than many of the other copper deposits in the world. A large percentage of the ore volume contains 14 to 17 per cent. of copper, and lower grades still show a content of 5 to 7 per cent.

There are 112 mines or copper ore hills, some of them several miles in length. The tonnage of copper ore above the average level of the soil is figured to be about 6,000,000 tons, of which one-fifth averages 15 per cent. and four-fifths 7 per cent. The ore deposits continue underground to an unknown depth. Borings have been made in the ore to a depth of more than 300 feet.

Gold and platinum and several other valuable minerals were discovered, and gold was worked for a few years near Ruwe, long before the South African Railway had reached Katanga and brought modern mining machinery.

The prospectors located, outside of copper and gold, large deposits of extremely rich hematite iron stone. But one of the most valuable finds was a very large belt of tin ore, extending in a northeasterly direction from the western end of the copper belt to the central part of Katanga, towards Lake Tanganyka.

A powerful Anglo-Belgian company, the *Union Minière*, of which Belgian interests now hold about two-thirds of the shares, was created to work the copper mines and a large tract of the tin deposits. Subsequently several Belgian concerns obtained prospecting and mining concessions

in other parts of Katanga, and many of their prospectors, together with private prospectors, were at work in Katanga for several years before the war.

The *Union Minière* started work in the mine known as the "Etoile du Congo" (Congo Star), and erected a water jacket smelter on the Lubumbashi River. The ore is oxidized copper and is smelted with lime and iron ore. A large mine has been opened at Kambove, and some preliminary workings have been done in one or two mines between Kambove and the "Star." Subsequent to the arrival of the railroad, the equipment of the "Union Minière" was gradually improved; there are now six large water jacket furnaces at the Lubumbashi and the output of smelted copper in 1918 is about 40,000 tons. The furnaces were constructed at Allentown, Pa., and are the largest black copper blast furnaces ever built. Only the richest ore, about 16 per cent. bearing, is being smelted now, being first enriched, by washing, up to more than 20 per cent. The large quantities of poorer ore (5 to 8 per cent.) will be treated in an electrolytic plant that is now being built near the Lualaba River; the power derived from the Lualaba waterfalls at Nzilo will give about 200,000 horsepower.

Realizing that the copper mining district would attract a large population and an important general trade, the Belgian Government, soon after the Congo was taken over as a Belgian Colony, participated actively in the opening up of this country, and spent about \$2,000,000 to build on the Lubumbashi River, one mile distant from the copper smelters, a modern and well equipped town, called Elizabethville. At the same time the Government financially assisted the Katanga Railway Company and made great efforts to introduce agriculture.

Elizabethville, the capital of Katanga, is now a very pretty and healthy town, mostly built of brick, with miles of broad streets bordered with tidy bungalows and gardens, a public park, churches, schools for white and native boys and girls, and numerous Belgian and South African stores. A number of truck farms have been established around the town and appear to do well notwithstanding the former infertility of the soil. Connection with Johannesburg, Beira and Capetown is established twice a week by express trains, reaching Capetown in five days. The white population is about 1,200, with more than a hundred white women and numerous children. The native population is about 5,000.

The Katanga Tin Belt

Important deposits of tin ore, mostly cassiterite, are located near the Nzilo waterfalls, and steps are taken now to open the readily accessible deposit of Busanga. The tin deposits near Bukama and Kiambi are being prepared by preliminary workings. The opening of the railway to

Bukama on May 22, 1918, enables the mining concerns to introduce the necessary machinery.

No estimate can be given as yet of the tonnage of tin ore available in Katanga, but it is known to be very large. Some hundreds of tons of tin ingots have been produced with still inadequate machinery, and give a fair sample of the future output.

Future Development of the Katanga Mines

There is no doubt that the Katanga copper and tin mines will soon rank among the most important producers of the world. The output of copper is likely some day to exceed 100,000 tons; this conservative estimate is based on the fact that two mines, working only their richest ore, are turning out this year 40,000 tons of copper, whereas there are more than a hundred still unworked deposits around Kambove and Elizabethville.

The complete development of the copper mines will require extensive use of the most up-to-date machinery and methods of mechanical extraction, as the native population is scanty and does not stand hard work in the mines. The native laborers are paid high wages and large numbers of them come to Katanga from the surrounding English colonies of Rhodesia and Nyassa and from the Congo; they are well cared for, well fed and well paid. But the value of modern machinery is illustrated by the fact that each of the recently introduced American steam shovels, whose use was started by the American general manager of the mines, Mr. Horner, does the work of 1,000 native workmen. The total number of natives at present employed on the copper mines varies from 5,000 to 7,000.

A very important question is the transportation of copper and tin towards the east or west coast. Several new railway lines have been projected. (See page 19.) It is believed that improvement of transportation facilities on the Congo River could supply the cheapest freight rates for the products of the Katanga mines. This question is now being considered by the Belgian Government.

The copper is now sent to Europe via Capetown or via Beira.

The Diamond Mines in the Congo

Diamond bearing pipes of *blue ground*, similar to the blue ground of Kimberley (South Africa), have been discovered on the high tablelands of the Kundelungu Mountains, 150 miles N.N.E. of Elizabethville. They are near the new automobile road running from Elizabethville to Kasenga, a Government post on the Luapula River, a few miles south of Lake Moero. Some prospecting has been done and fair quality diamonds were obtained, but the research work has been interrupted by the war.

Extensive tracts of diamond bearing gravels are now being worked by a Belgo-American company in the south-

ern part of the Kasai district, around the Tchikapa River. The output was as follows:

1913	15,000 carats	value \$ 75,000
1914	39,000 carats	value 195,000
1915	54,000 carats	value 270,000
1916	80,000 carats	value 400,000
1917	185,000 carats	value 1,288,500

Diamonds of fair quality and size have been picked up lately in some gold mines of the northeast. Topaz occurs also with the gold.

The Goldfields of the Northeastern Congo

Gold was discovered accidentally some years ago in the gravel of small rivers west of Lake Albert, and the Government started placer gold mining around the small towns of Kilo and Moto. Prospecting has been active, too, in the lands conceded to Belgian and Belgo-American companies. Gold-bearing quartz rock has been located near Kilo and Moto.

Four mines are being worked now, two by Government and two by a private company. The output of the Government mines is about three tons yearly, valued at \$2,000,000. This is obtained by the most crude methods of sluicing; introduction of modern systems and machinery will largely increase the output and diminish the loss of fine gold. The equipment of the Government mines has been impeded by the war and by lack of transportation. However, a motor road has been built recently by Government between Kisseigni on Lake Albert and Kilo (60 miles); it is now being extended to the mining center of Moto.

The gold district, favored with fertile soil and a delightful climate, is pronounced by many colonials as being the finest piece of land in Africa.

Enthusiastic descriptions of the North-Eastern Congo and its gold field have appeared in the South-African Press. The most interesting one is written by Sir Alfred Sharpe, formerly Governor of Nyassaland, who recently made three extensive trips through the Kilo and Uelle district.

The Belgian Government has not been able, during the war, to determine exactly under what conditions private enterprise will be admitted in the Eastern Congo gold fields. The Government is anxious to avoid the rush of prospectors of very mixed quality, who have hitherto been common in new gold areas, and would be specially undesirable in a wild and still undeveloped country such as the center of Africa.

Coal and Oil in the Belgian Congo

The fuel required for the copper smelters of Katanga is imported from Wankie, an important coaling center near the Victoria Falls (Rhodesia).

Coal deposits of medium quality and large extent have been prospected near Albertville, on Lake Tanganyka. Indications of coal have been found near Bukama. On the whole, although there is reason to believe that valuable coal fields will be found in the Congo, the indications given by superficial prospecting are still unimportant. Systematic boring on a large scale would prove very valuable for coal and every kind of minerals.

Oil-shale has been found on the Congo River near Pontthierville, and some prospecting work was in progress when the war started. Good indications of oil are recorded in other places, and some of them appear to be really interesting. The discovery of oil in Central Africa would have a great influence on the development of transportation, as it would supply fuel for steamers, railways and motor transport. In fact, the discovery of important oil fields would mean a complete and rapid transformation of economic conditions in the whole of tropical Africa.

In order to facilitate the importation of crude oil in the Congo, a 4-inch pipe line has been laid between Matadi and Leopoldville (260 miles), with eight intermediate pumping stations and a capacity of 50,000 tons annually. The railway engines and several steamers are burning oil.

Iron Ore Deposits in the Congo

The Congo natives have been working iron ore deposits for many centuries, and their *fundis* (skilled workmen) turned out extremely beautiful weapons, engraved and ornamented with inlaid copper and brass. Highly artistically worked hatchets, spears, *assagais*, swords, daggers, beheading and throwing knives were common all over the Congo, and specimens are installed in the museum of Europe, especially in the fine Congo Museum at Tervueren (Brussels). Some magnificent specimens of ivory carvings from the Congo are to be seen in the Natural History Museum, New York City. Large quantities of hoes, axes, wire and other iron implements are still being manufactured by the natives. Some of these native instruments, such as tattooing knives, show the greatest taste and skill in very delicate and artistic work.

Rich iron ore, containing up to 60 per cent. of iron, is found in many parts of the Congo, and will be worked some day, when cheap transportation or industrial enterprises in Africa permit of its economic utilization.